AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An epitaxial growth method to form a semiconductor thin film including a heterojunction of a group III-V compound semiconductor by means of molecular beam epitaxy, the method comprising:

a first step of irradiating a molecular beam of at least one of group III elements and a molecular beam of a first group V element to form a first compound semiconductor layer;

a second step of stopping the irradiation of the molecular beam of the group III element and the molecular beam of the first group V element and halting growth for a period of time until [[the]] a remaining molecular beam intensity of the first group V element is reduced to be in the range of 0.01 to 0.1 ~~1/10 or less~~ of that in the first step~~, wherein the remaining molecular beam intensity of the first group V element is not less than 1/100 of that in the first step~~; and

a third step of irradiating a molecular beam of at least one of the group III elements and a molecular beam of a second group V element to form an etch stopper layer on the first compound semiconductor layer, the etch stopper layer being composed of the second compound semiconductor layer which is different from the first compound semiconductor,

wherein the semiconductor thin film comprises a high electron mobility transistor structure.

2. (Currently Amended) An epitaxial growth method to form a semiconductor thin film including a heterojunction of a group III-V compound semiconductor by means of molecular beam epitaxy, the method comprising:

a first step of irradiating a molecular beam of at least one of group III elements and a molecular beam of a first group V element to form a first compound semiconductor layer;

a second step of stopping the irradiation of the molecular beam of the group III element and the molecular beam of the first group V element and irradiating a molecular beam of a second group V element and halting growth for a period of time until [[the]] a remaining molecular beam intensity of the first group V element is reduced to be in the range of 0.01 to 0.1 ~~1/10 or less~~ of that in the first step~~, wherein the remaining molecular beam intensity of the first group V element is not less than 1/100 of that in the first step~~; and

a third step of further irradiating a molecular beam of at least one of the group III elements to form an etch stopper layer on the first compound semiconductor layer, the etch stopper layer being composed of the second compound semiconductor layer which is different from the first compound semiconductor,

wherein the semiconductor thin film comprises a high electron mobility transistor structure.

3. (Previously Presented) The epitaxial growth method as claimed in claim 1,

wherein the first compound semiconductor layer is any one of an InAlAs layer and an InGaAs layer and the second compound semiconductor layer is any one of an InP layer and an InGaP layer.

4. (Previously Presented) The epitaxial growth method as claimed in claim 1, wherein the first compound semiconductor layer is any one of an InP layer and an InGaP layer and the second compound semiconductor layer is any one of an InAlAs layer and an InGaAs layer.

5. (Previously Presented) The epitaxial growth method as claimed in claim 2, wherein the first compound semiconductor layer is any one of an InAlAs layer and an InGaAs layer and the second compound semiconductor layer is any one of an InP layer and an InGaP layer.

6. (Previously Presented) The epitaxial growth method as claimed in claim 2, wherein the first compound semiconductor layer is any one of an InP layer and an InGaP layer and the second compound semiconductor layer is any one of an InAlAs layer and an InGaAs layer.